ABSTRACT OF THE DISCLOSURE

The present invention presents: (1) a starting method that is capable of quickly switching to the reforming process after warming up a catalyst; (2) a fuel supplying apparatus that is capable of maintaining a stable supply of a mixed water-methanol solution while preventing water from freezing in a cold climate, and is also capable of immediately supplying a mixed water-methanol gas that has a composition which is outside of the high-rate reaction region during the starting/stopping operation of the reformer when the control tends to be unstable; (3) a method to quickly cool down a catalyst layer without causing thermal runaway when stopping the operation of the methanol reforming apparatus; and (4) a method to quickly cool down the catalyst layer while preventing thermal runaway from occurring and removing residual fuel when stopping the operation of the methanol reforming apparatus. In order to achieve the objects described above, the methanol reforming apparatus that generates a hydrogen-rich gas by reacting a mixed gas of water, methanol and air on a catalyst is supplied with the fuel from a fuel supplying apparatus comprising a mixed water-methanol solution tank wherein the molar ratio of water and methanol used for reforming is controlled to a predetermined value, a mixed water-methanol solution tank wherein the molar ratio of water and methanol is controlled to 4.6 or higher, and a switching means that switches the mixed water-methanol solution tank used as a fuel source according to the conditions of operation of the methanol reforming apparatus.